Indefinite Integrals

1. Compute each of the following integrals.

(a) $\int 5x^6 - 7x^{-10} + 3\,dx$

(b) $\int 5x^6 - 7x^{-10}\,dx + 3$

Computing Indefinite Integrals

Compute each of the following integrals.

2. $\int 6z^7 - \sqrt[7]{z^2} - 2\,dz$

3. $\int t^{-10} + \frac{1}{6t^5} - \frac{8}{t}\,dt$

4. $\int 14\cos(x) + 8\sec(x)\tan(x)\,dx$

5. $\int (3-z)(2z^2+4)\,dz$

6. $\int 6\mathbf{e}^y - \frac{10}{1+y^2} - 1\,dy$

7. Determine $f(x)$ if $f''(x) = 16 + \frac{96}{x^4} - 20x^3$, $f(-1) = 43$ and $f(2) = -29$.

Substitution Rule for Indefinite Integrals, Part I

Compute each of the following integrals. Clearly show the substitution used for each integral and how it was used. In other words, don't just write an answer down for any of these.

8. $\int \frac{\left[4 + 3\ln(4t)\right]^{10}}{t}\,dt$

9. $\int (2-x)\sqrt{6 - 4x + x^2}\,dx$

10. $\int \frac{y\cos(y^2)}{\sin(y^2)}\,dy$

11. $\int \mathbf{e}^{1+3z} - 4\sec^2(1+3z)\,dz$

12. $\int \frac{1}{w^2} - \sec^2(w)\tan^4(w)\,dw$